



Matter 089.ST25.txt
SEQUENCE LISTING

<110> Tucker, Kenneth
Plosila, Laura

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gene sequence and uses thereof.

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<150> 08/968685
<151> 1997-11-12

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Matter 089.ST25.txt

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Matter 089.ST25.txt

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Matter 089.ST25.txt

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Matter 089.ST25.txt

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Matter 089.ST25.txt

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Asn Asn Gly Leu Thr Val Gly Asn Ser Thr Leu Asn Asn Asp Gly Leu
565 570 575

Ser Val Lys Asn Thr Asn Ser Asn Lys Gln Ile Gln Val Gly Ala Asp
580 585 590

Gly Ile Thr Phe Thr Asp Ile Ser Asn Ser Lys Pro Gly Ala Gly Ile
595 600 605

Glu Asn Thr Thr Arg Ile Thr Arg Asp Gly Ile Gly Phe Ala Asn Asn
610 615 620

Thr Gly Ser Leu Asp Ala Asn Lys Pro Arg Leu Thr Pro Thr Gly Ile
625 630 635 640

Asn Ala Gly Gly Lys Glu Leu Thr Asn Val Gln Ser Ala Ile Asn Pro
645 650 655

Ala Thr Asn Gly Gly Gln Leu Asp Phe Met Asn Arg Leu Ser Thr Ala
660 665 670

Matter 089.ST25.txt

Asn Thr Glu Lys Ser Gly Ser Ala Ala Thr Ile Lys Asp Leu Tyr Asn
 675 680 685
 Leu Ser Gln Val Pro Leu Thr Phe Ala Gly Asp Thr Gly Pro Asn Val
 690 695 700
 Thr Lys Lys Leu Gly Glu Ile Leu Lys Val Lys Gly Gly Lys Thr Thr
 705 710 715 720
 Ala Asp Asp Leu Thr Lys Asn Asn Ile Gly Val Val Ala Asp Ser Thr
 725 730 735
 Asp Asn Ser Leu Thr Val Lys Leu Ala Lys Thr Leu Ser Asp Leu Asp
 740 745 750
 Ala Val Asn Thr Lys Thr Leu Thr Ala Ser Asp Lys Val Thr Val Asp
 755 760 765
 Ser Gly Asn Asn Thr Ala Lys Leu Gln Asn Gly Asp Leu Thr Phe Ser
 770 775 780
 Lys Gln Asn Thr Gly Ala Thr Pro Ala Thr Asn Ser Lys Thr Ile Gly
 785 790 795 800
 Val Asp Gly Leu Lys Phe Thr Asp Asn Asn Gly Ile Ala Leu Asp Gly
 805 810 815
 Thr Thr Tyr Ile Thr Lys Asp Lys Val Gly Phe Ala Lys Gln Asp Gly
 820 825 830
 Ser Leu Asp Lys Ser Lys Pro Tyr Leu Asp Lys Asp Lys Leu Lys Val
 835 840 845
 Gly Glu Val Glu Ile Thr Thr Asn Gly Ile Asn Ala Gly Gly Lys Ala
 850 855 860
 Ile Thr Gly Leu Ser Asn Thr Leu Thr Asp Ala Thr Asn Ala Thr Thr
 865 870 875 880
 Gly His Val Thr Gln Leu Gly Ile Val Asp Ser Thr Asp Lys Thr Arg
 885 890 895
 Ala Ala Ser Ile Gly Asp Val Leu Asn Ala Gly Phe Asn Leu Lys Asn
 900 905 910
 Asn Gly Asp Ala Lys Asp Phe Val Ser Thr Tyr Asp Thr Val Asp Phe

915

920

Ile Asn Gly Asn Ala Thr Thr Ala Lys Val Thr Tyr Asp Gly Lys Ala
930 935 940

Ser Lys Val Ala Tyr Asp Val Asn Val Asp Gly Thr Thr Ile His Leu
945 950 955 960

Thr Gly Ala Asp Gly Asn Lys Asn Gln Ile Gly Val Lys Thr Thr Thr
965 970 975

Leu Thr Lys Thr Asp Ala Lys Gly Asp Lys Ala Ile Asn Phe Ser Val
980 985 990

Asn Ser Gly Asp Asp Lys Ala Leu Ile Asn Ala Lys Asp Ile Ala Asp
995 1000 1005

Asn Leu Asn Thr Leu Ala Gly Glu Ile Arg Asn Thr Lys Gly Thr
1010 1015 1020

Ala Asp Thr Ala Leu Gln Thr Phe Gln Val Lys Lys Val Lys Glu
1025 1030 1035

Asn Gly Asp Asp Asp Asn Asp Ala Asp Thr Ile Thr Val Gly Lys
1040 1045 1050

Asp Ala Lys Thr Asn Gln Val Asn Thr Leu Lys Leu Lys Gly Lys
1055 1060 1065

Asn Gly Leu Asp Ile Gln Thr Asn Lys Asp Gly Thr Val Thr Phe
1070 1075 1080

Gly Ile Asn Thr Gln Ser Gly Leu Lys Ala Gly Asn Asn Thr Thr
1085 1090 1095

Leu Asn Asn Asn Gly Leu Ser Ile Lys Asn Thr Ala Gly Asn Glu
1100 1105 1110

Gln Ile Gln Val Gly Ala Asp Gly Val Lys Phe Ala Lys Val Asn
1115 1120 1125

Asn Gly Val Val Gly Ala Gly Ile Asp Gly Thr Thr Arg Ile Thr
1130 1135 1140

Arg Asp Glu Ile Gly Phe Ala Gly Thr Asn Gly Ser Leu Asp Lys
1145 1150 1155

Matter 089.ST25.txt

Ser Lys Pro His Leu Ser Lys Asp Gly Ile Asn Ala Gly Gly Lys
1160 1165 1170

Lys Ile Thr Asn Ile Gln Ser Gly Glu Ile Ala Gln Asn Ser Asn
1175 1180 1185

Asp Ala Val Thr Gly Gly Lys Ile Tyr Asp Leu Lys Thr Glu Leu
1190 1195 1200

Glu Asn Lys Ile Ser Ser Thr Ala Lys Thr Ala Gln Asn Ser Leu
1205 1210 1215

His Glu Phe Ser Val Ala Asp Glu Gln Gly Asn Asn Phe Thr Val
1220 1225 1230

Ser Asn Pro Tyr Ser Ser Tyr Asp Thr Ser Lys Thr Ser Asp Val
1235 1240 1245

Ile Thr Phe Ala Gly Glu Asn Gly Ile Thr Thr Lys Val Asn Lys
1250 1255 1260

Gly Val Val Arg Val Gly Ile Asp Gln Thr Lys Gly Leu Thr Thr
1265 1270 1275

Pro Lys Leu Thr Val Gly Asn Asn Asn Gly Lys Gly Ile Val Ile
1280 1285 1290

Asp Ser Gln Asn Gly Gln Asn Thr Ile Thr Gly Leu Ser Asn Thr
1295 1300 1305

Leu Ala Asn Val Thr Asn Asp Lys Gly Ser Val Arg Thr Thr Glu
1310 1315 1320

Gln Gly Lys Ile Ile Lys Asp Glu Asp Lys Thr Arg Ala Ala Ser
1325 1330 1335

Ile Val Asp Val Leu Ser Ala Gly Phe Asn Leu Gln Gly Asn Gly
1340 1345 1350

Glu Ala Val Asp Phe Val Ser Thr Tyr Asp Thr Val Asn Phe Ala
1355 1360 1365

Asp Gly Asn Ala Thr Thr Ala Lys Val Thr Tyr Asp Thr Ser
1370 1375 1380

Lys Thr Ser Lys Val Val Tyr Asp Val Asn Val Asp Asp Thr Thr
1385 1390 1395

Matter 089.ST25.txt

Ile Glu Val Lys Asp Lys Lys Leu Gly Val Lys Thr Thr Thr Leu
1400 1405 1410

Thr Ser Thr Gly Thr Gly Ala Asn Lys Phe Ala Leu Ser Asn Gln
1415 1420 1425

Ala Thr Gly Asp Ala Leu Val Lys Ala Ser Asp Ile Val Ala His
1430 1435 1440

Leu Asn Thr Leu Ser Gly Asp Ile Gln Thr Ala Lys Gly Ala Ser
1445 1450 1455

Gln Ala Asn Ser Ser Ala Gly Tyr Val Asp Ala Asp Gly Asn Lys
1460 1465 1470

Val Ile Tyr Asp Ser Thr Asp Asn Lys Tyr Tyr Gln Ala Lys Asn
1475 1480 1485

Asp Gly Thr Val Asp Lys Thr Lys Glu Val Ala Lys Asp Lys Leu
1490 1495 1500

Val Ala Gln Ala Gln Thr Pro Asp Gly Thr Leu Ala Gln Met Asn
1505 1510 1515

Val Lys Ser Val Ile Asn Lys Glu Gln Val Asn Asp Ala Asn Lys
1520 1525 1530

Lys Gln Gly Ile Asn Glu Asp Asn Ala Phe Val Lys Gly Leu Glu
1535 1540 1545

Lys Ala Ala Ser Asp Asn Lys Thr Lys Asn Ala Ala Val Thr Val
1550 1555 1560

Gly Asp Leu Asn Ala Val Ala Gln Thr Pro Leu Thr Phe Ala Gly
1565 1570 1575

Asp Thr Gly Thr Thr Ala Lys Lys Leu Gly Glu Thr Leu Thr Ile
1580 1585 1590

Lys Gly Gly Gln Thr Asp Thr Asn Lys Leu Thr Asp Asn Asn Ile
1595 1600 1605

Gly Val Val Ala Gly Thr Asp Gly Phe Thr Val Lys Leu Ala Lys
1610 1615 1620

Asp Leu Thr Asn Leu Asn Ser Val Asn Ala Gly Gly Thr Lys Ile
1625 1630 1635

Matter 089.ST25.txt

Asp Asp Lys Gly Val Ser Phe Val Asp Ser Ser Gly Gln Ala Lys
 1640 1645 1650
 Ala Asn Thr Pro Val Leu Ser Ala Asn Gly Leu Asp Leu Gly Gly
 1655 1660 1665
 Lys Val Ile Ser Asn Val Gly Lys Gly Thr Lys Asp Thr Asp Ala
 1670 1675 1680
 Ala Asn Val Gln Gln Leu Asn Glu Val Arg Asn Leu Leu Gly Leu
 1685 1690 1695
 Gly Asn Ala Gly Asn Asp Asn Ala Asp Gly Asn Gln Val Asn Ile
 1700 1705 1710
 Ala Asp Ile Lys Lys Asp Pro Asn Ser Gly Ser Ser Ser Asn Arg
 1715 1720 1725
 Thr Val Ile Lys Ala Gly Thr Val Leu Gly Gly Lys Gly Asn Asn
 1730 1735 1740
 Asp Thr Glu Lys Leu Ala Thr Gly Gly Val Gln Val Gly Val Asp
 1745 1750 1755
 Lys Asp Gly Asn Ala Asn Gly Asp Leu Ser Asn Val Trp Val Lys
 1760 1765 1770
 Thr Gln Lys Asp Gly Ser Lys Lys Ala Leu Leu Ala Thr Tyr Asn
 1775 1780 1785
 Ala Ala Gly Gln Thr Asn Tyr Leu Thr Asn Asn Pro Ala Glu Ala
 1790 1795 1800
 Ile Asp Arg Ile Asn Glu Gln Gly Ile Arg Phe Phe His Val Asn
 1805 1810 1815
 Asp Gly Asn Gln Glu Pro Val Val Gln Gly Arg Asn Gly Ile Asp
 1820 1825 1830
 Ser Ser Ala Ser Gly Lys His Ser Val Ala Ile Gly Phe Gln Ala
 1835 1840 1845
 Lys Ala Asp Gly Glu Ala Ala Val Ala Ile Gly Arg Gln Thr Gln
 1850 1855 1860
 Ala Gly Asn Gln Ser Ile Ala Ile Gly Asp Asn Ala Gln Ala Thr

1865		1870		1875	
Gly Asp 1880	Gln Ser Ile Ala	Ile 1885	Gly Thr Gly Asn	Val 1890	Val Ala Gly
Lys His 1895	Ser Gly Ala Ile	Gly 1900	Asp Pro Ser Thr	Val 1905	Lys Ala Asp
Asn Ser 1910	Tyr Ser Val Gly	Asn 1915	Asn Asn Gln Phe	Thr 1920	Asp Ala Thr
Gln Thr 1925	Asp Val Phe Gly	Val 1930	Gly Asn Asn Ile	Thr 1935	Val Thr Glu
Ser Asn 1940	Ser Val Ala Leu	Gly 1945	Ser Asn Ser Ala	Ile 1950	Ser Ala Gly
Thr His 1955	Ala Gly Thr Gln	Ala 1960	Lys Lys Ser Asp	Gly 1965	Thr Ala Gly
Thr Thr 1970	Thr Thr Ala Gly	Ala 1975	Thr Gly Thr Val	Lys 1980	Gly Phe Ala
Gly Gln 1985	Thr Ala Val Gly	Ala 1990	Val Ser Val Gly	Ala 1995	Ser Gly Ala
Glu Arg 2000	Arg Ile Gln Asn	Val 2005	Ala Ala Gly Glu	Val 2010	Ser Ala Thr
Ser Thr 2015	Asp Ala Val Asn	Gly 2020	Ser Gln Leu Tyr	Lys 2025	Ala Thr Gln
Gly Ile 2030	Ala Asn Ala Thr	Asn 2035	Glu Leu Asp His	Arg 2040	Ile His Gln
Asn Glu 2045	Asn Lys Ala Asn	Ala 2050	Gly Ile Ser Ser	Ala 2055	Met Ala Met
Ala Ser 2060	Met Pro Gln Ala	Tyr 2065	Ile Pro Gly Arg	Ser 2070	Met Val Thr
Gly Gly 2075	Ile Ala Thr His	Asn 2080	Gly Gln Gly Ala	Val 2085	Ala Val Gly
Leu Ser 2090	Lys Leu Ser Asp	Asn 2095	Gly Gln Trp Val	Phe 2100	Lys Ile Asn

Gly Ser Ala Asp Thr Gln Gly His Val Gly Ala Ala Val Gly Ala
 2105 2110 2115

Gly Phe His Phe
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Arg Gly Asp Lys Ser Ile Ala Ile Gly Asp Ile Ala Gln Ala Leu Gly
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Ser Gln Ser Ile Ala Ile Gly Asp
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18

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18

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18

<210> 16
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18

<210> 17
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gacattgcgc aa

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72

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